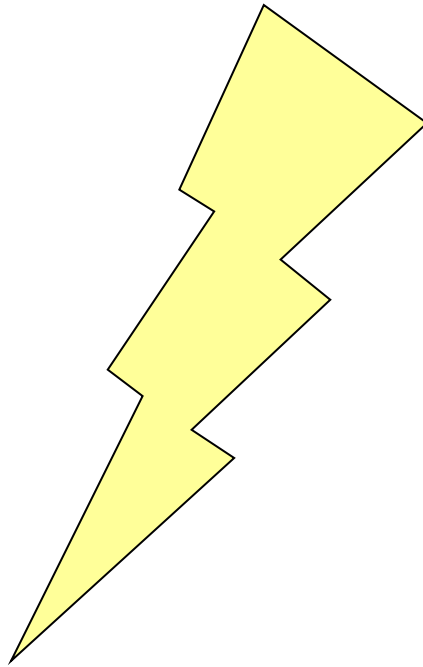


## Parts of the Cell

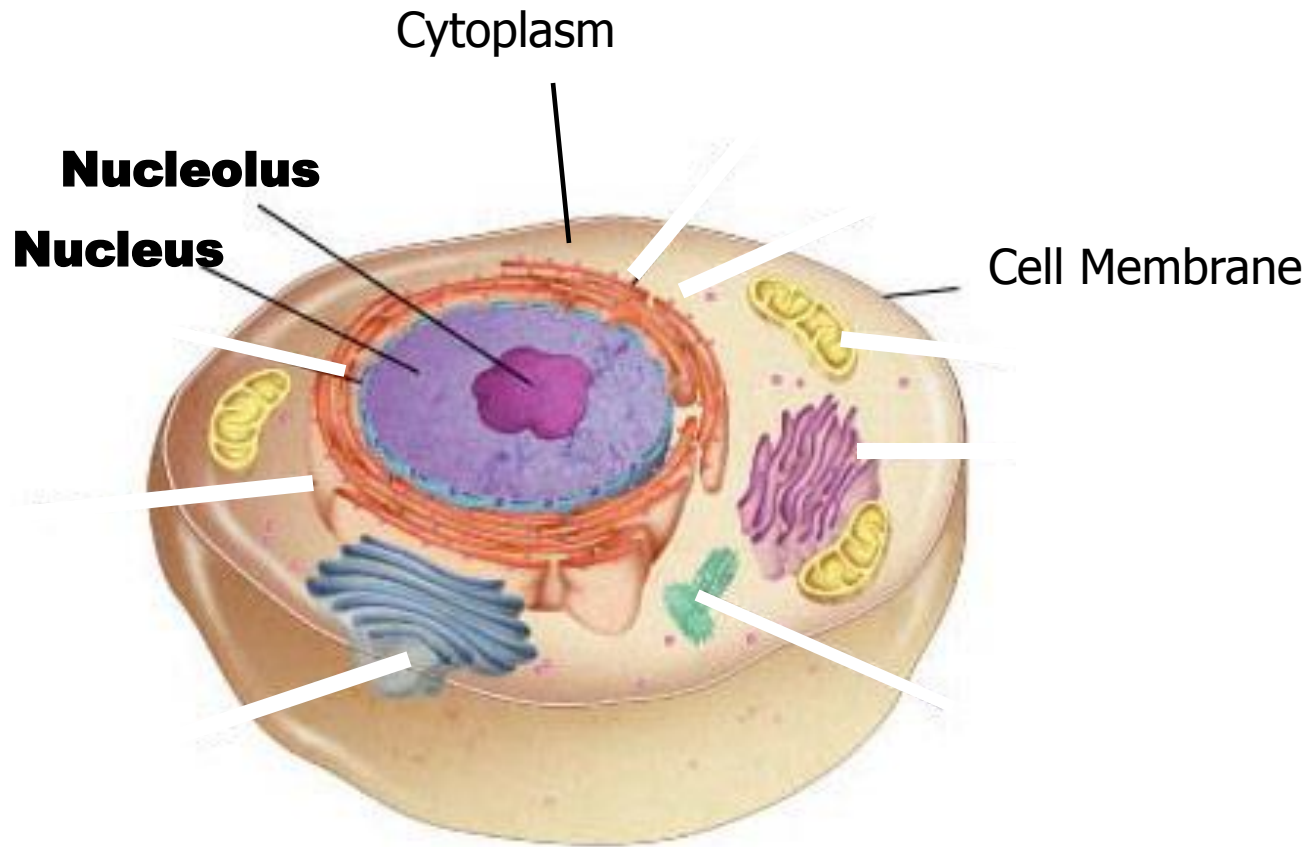
Plant, animal and fungal cells are all Eukaryotic.

How can you tell? They all have their DNA contained in a nucleus

Found in all cells (prokaryotic and eukaryotic)



# Animal Cell



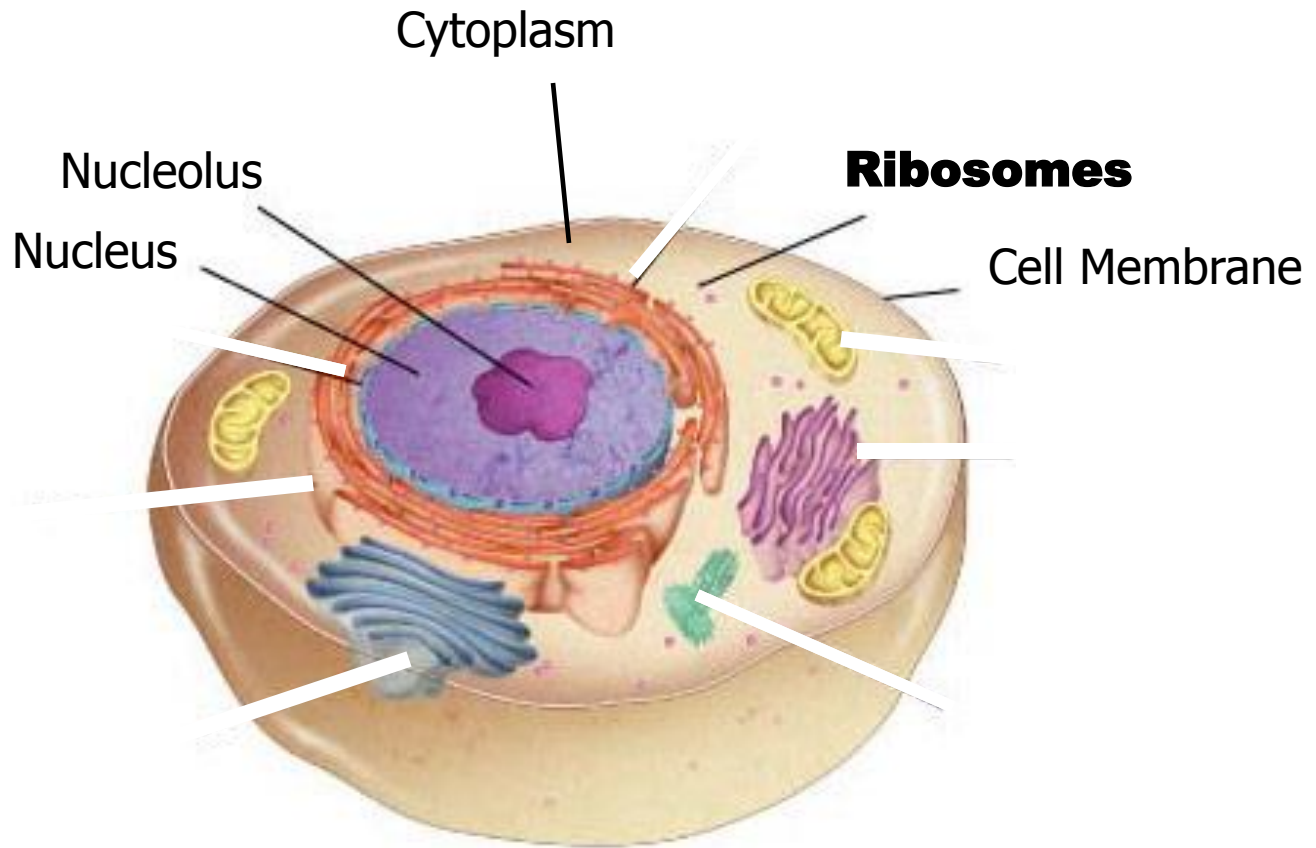
# Eukaryotic Cell Organelles and Function

## 1. Nucleus

- Function: holds the DNA
- Parts:
  - Chromatin: strands that contain genetic material
  - Nucleolus: dark spot in the middle of the nucleus that helps make ribosomes

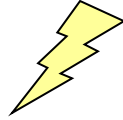
Where do ribosomes come from?

# Animal Cell



# Eukaryotic Cell Organelles and Function

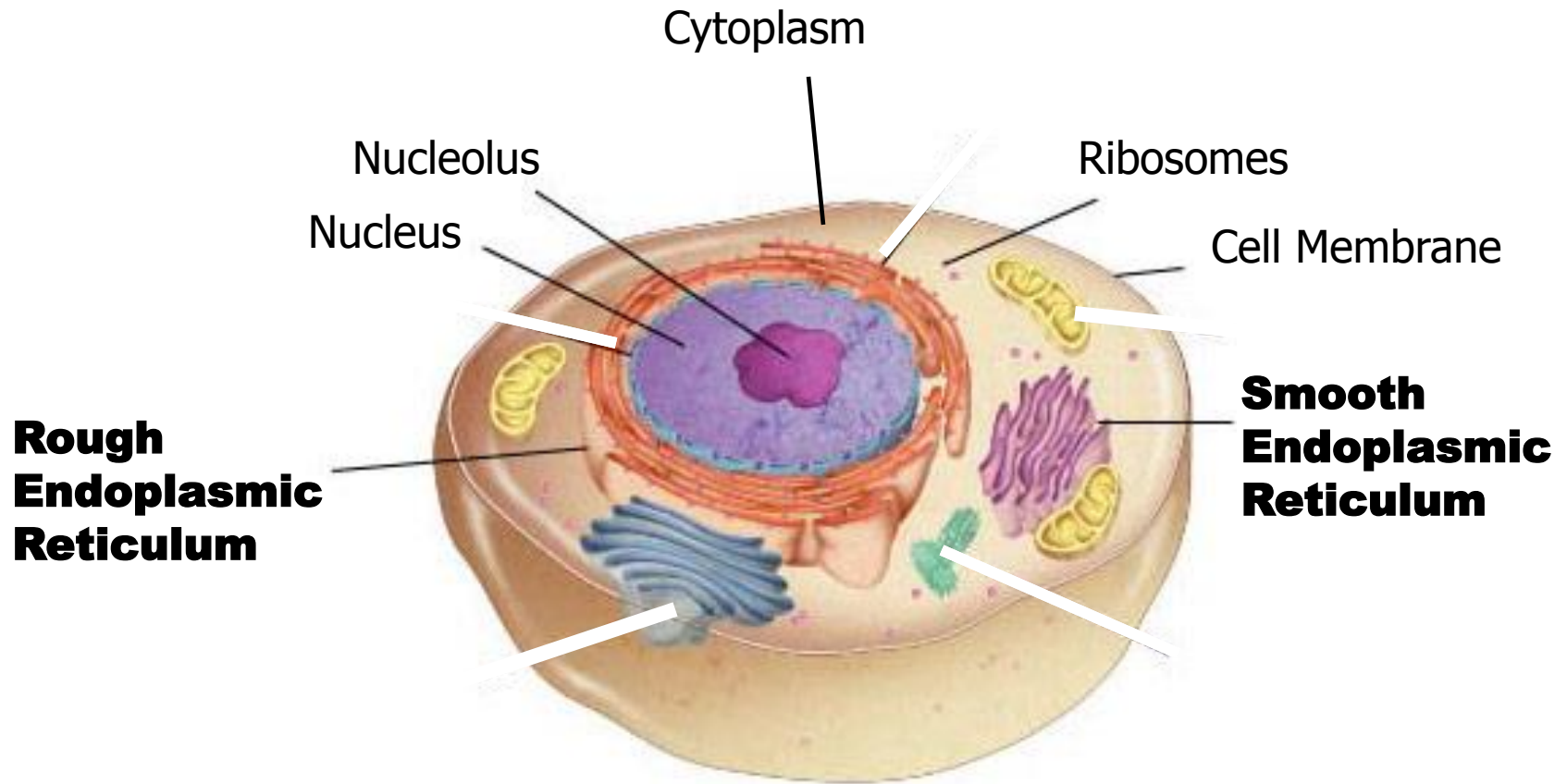
## 2. Ribosomes



- Function: Makes proteins
- Located: Cytoplasm

Found in **all** cells, prokaryotic and eukaryotic

# Animal Cell



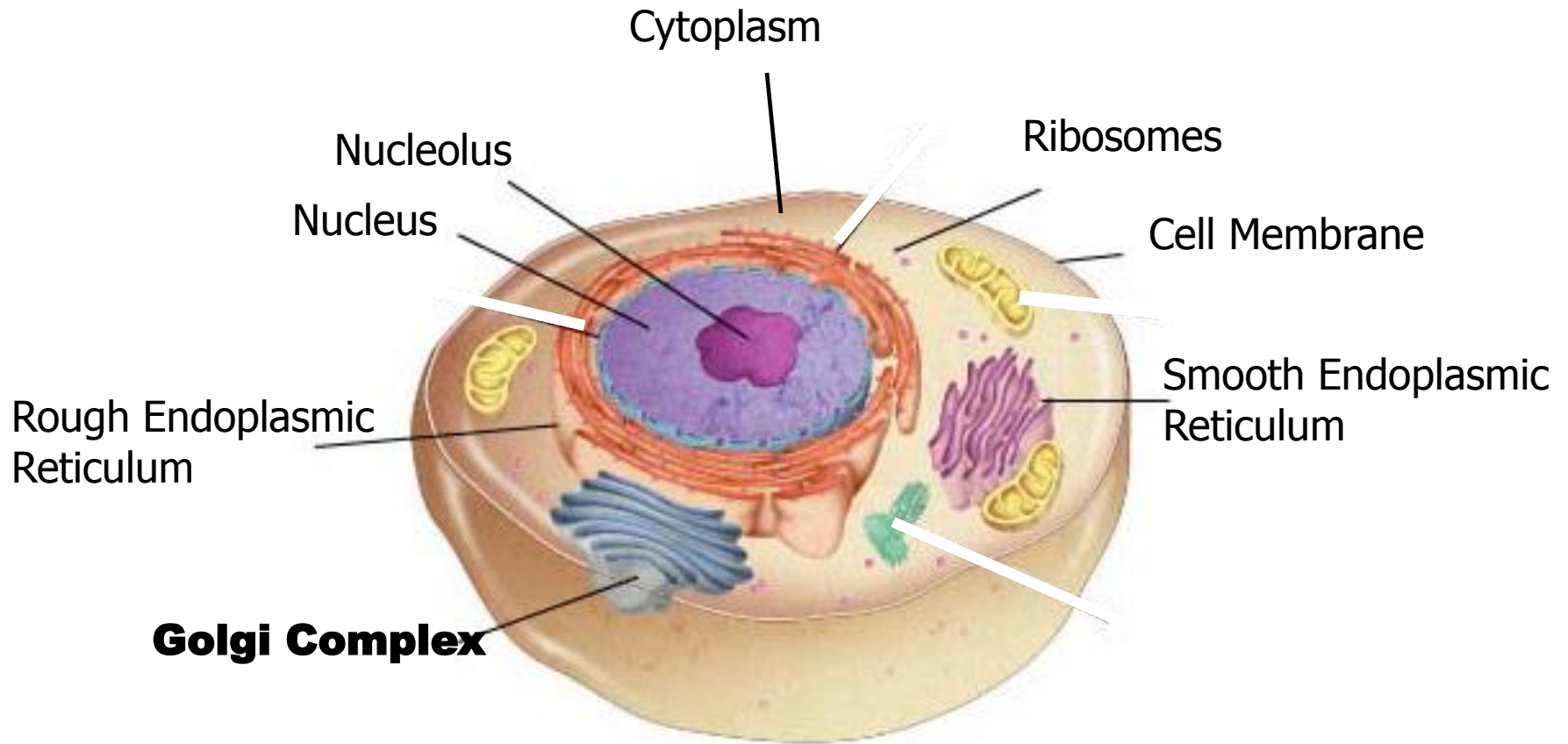
# Eukaryotic Cell Organelles and Function

## 3. Endoplasmic Reticulum (ER)

- Function: The delivery pathway of the cell (*inside the cell*)
- Located: Cytoplasm



# Animal Cell

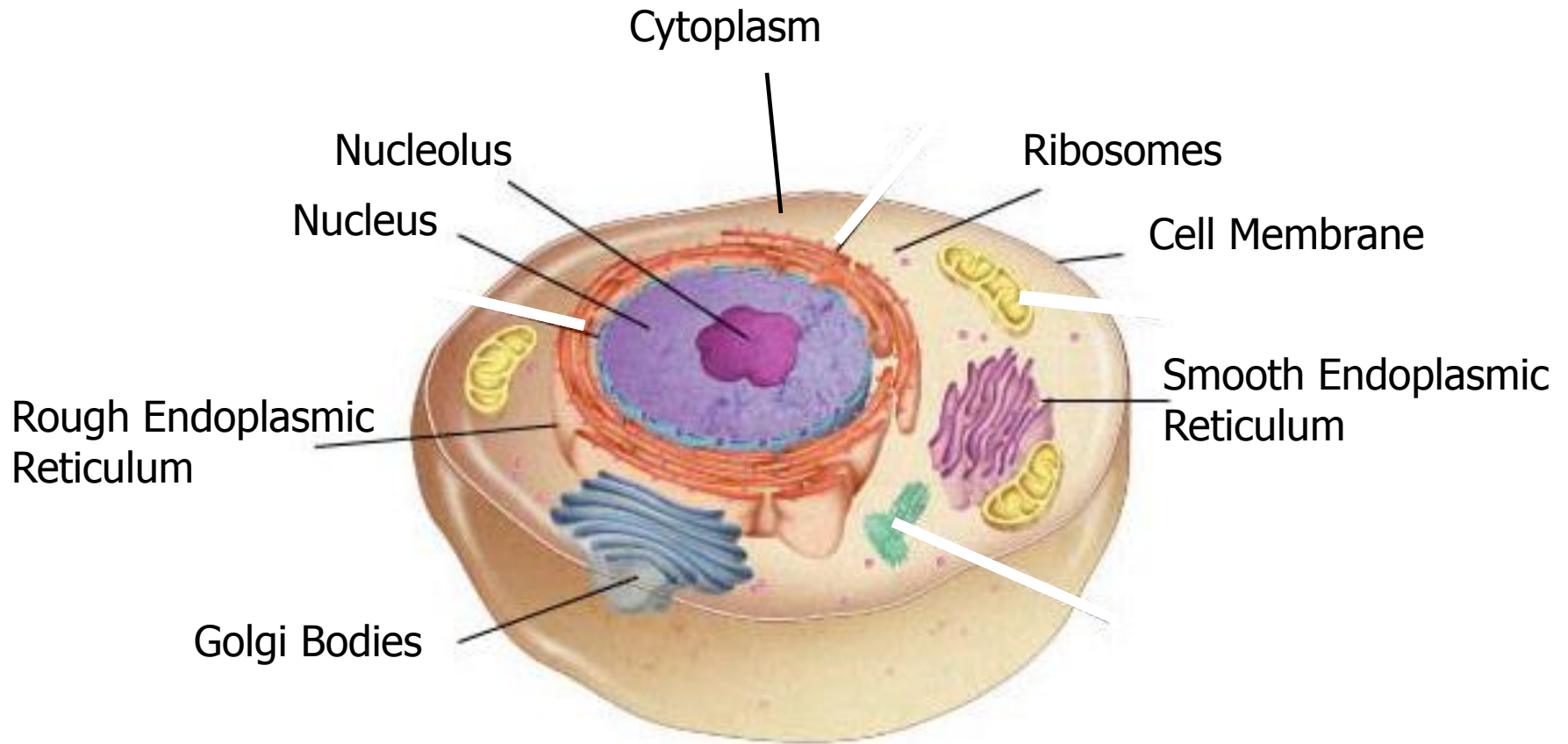


# Eukaryotic Cell Organelles and Function

## 4. Golgi Complex

- Function: packages and transports materials inside/outside of the cell
- Appearance: like a stack of pancakes
- Located: Cytoplasm

# Animal Cell



# Eukaryotic Cell Organelles and Function

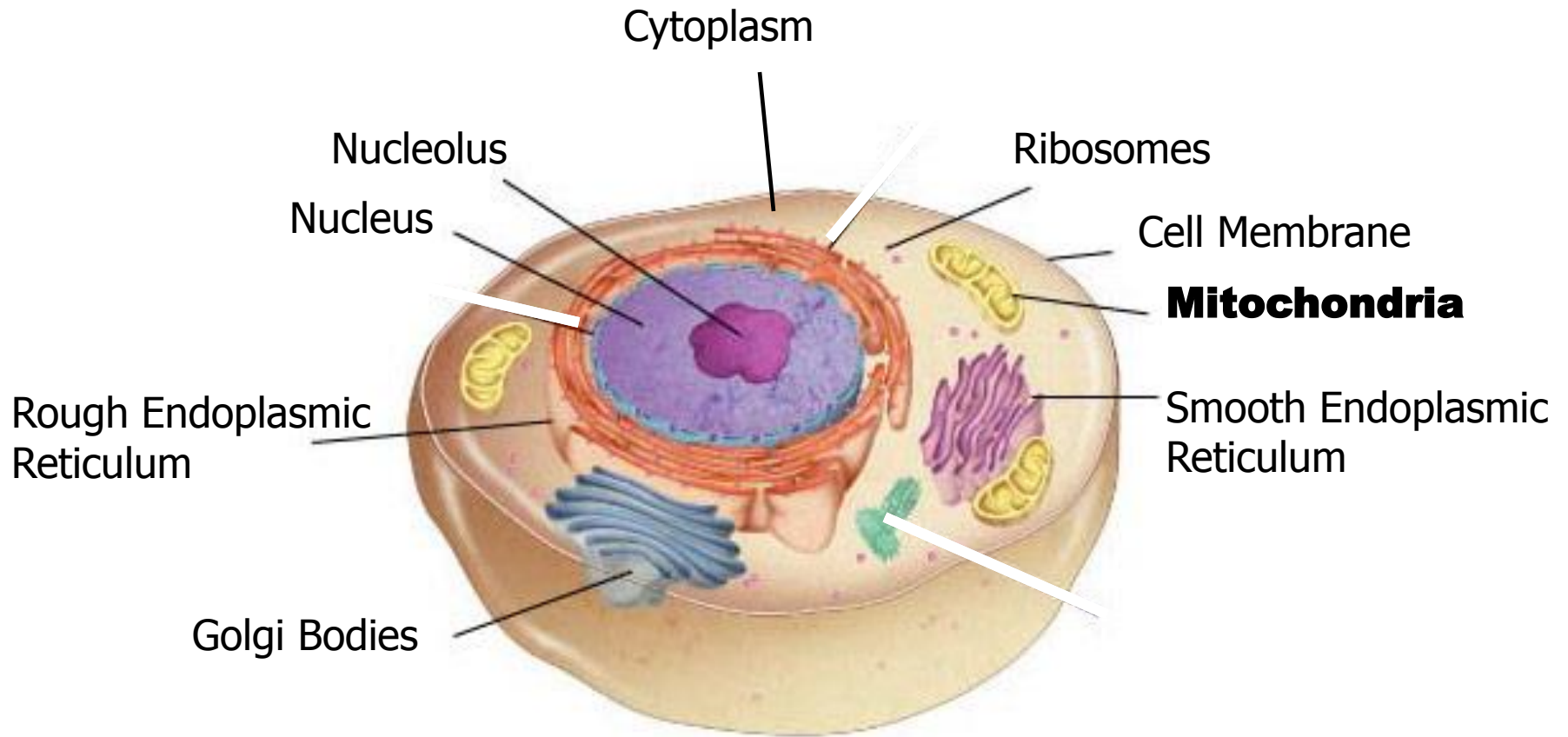
## 5. Lysosomes:

### Functions:

1. to break down food into particles the rest of the cell can use
2. to “digest” old cells and worn out cell parts.

– Located: Cytoplasm

# Animal Cell

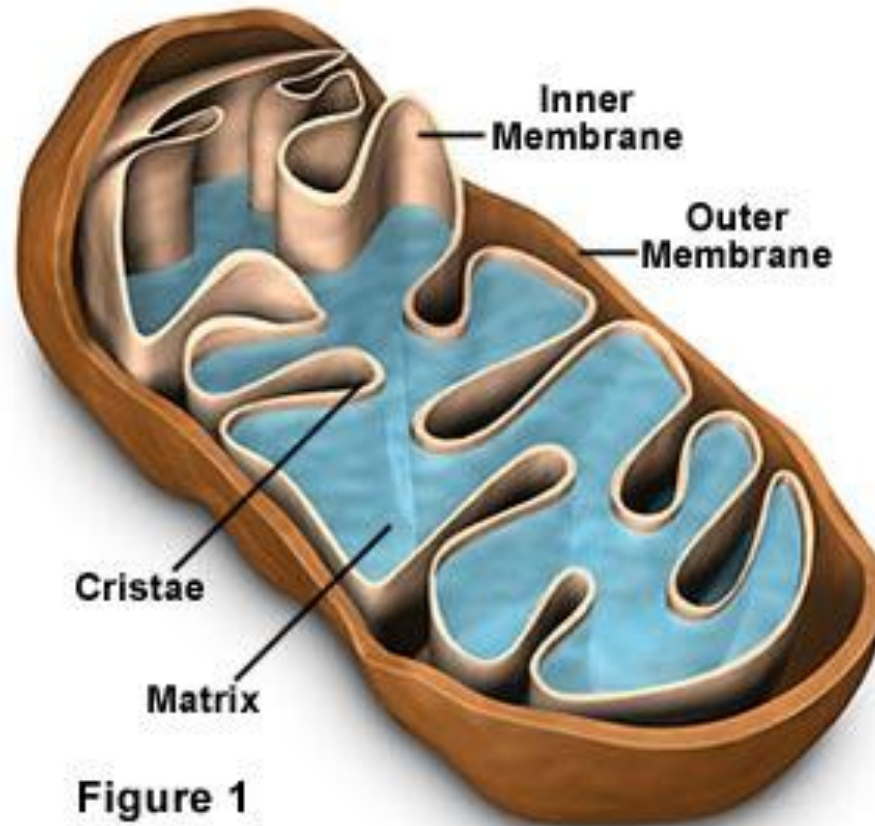


# Eukaryotic Cell Organelles and Function

## 6. Mitochondria

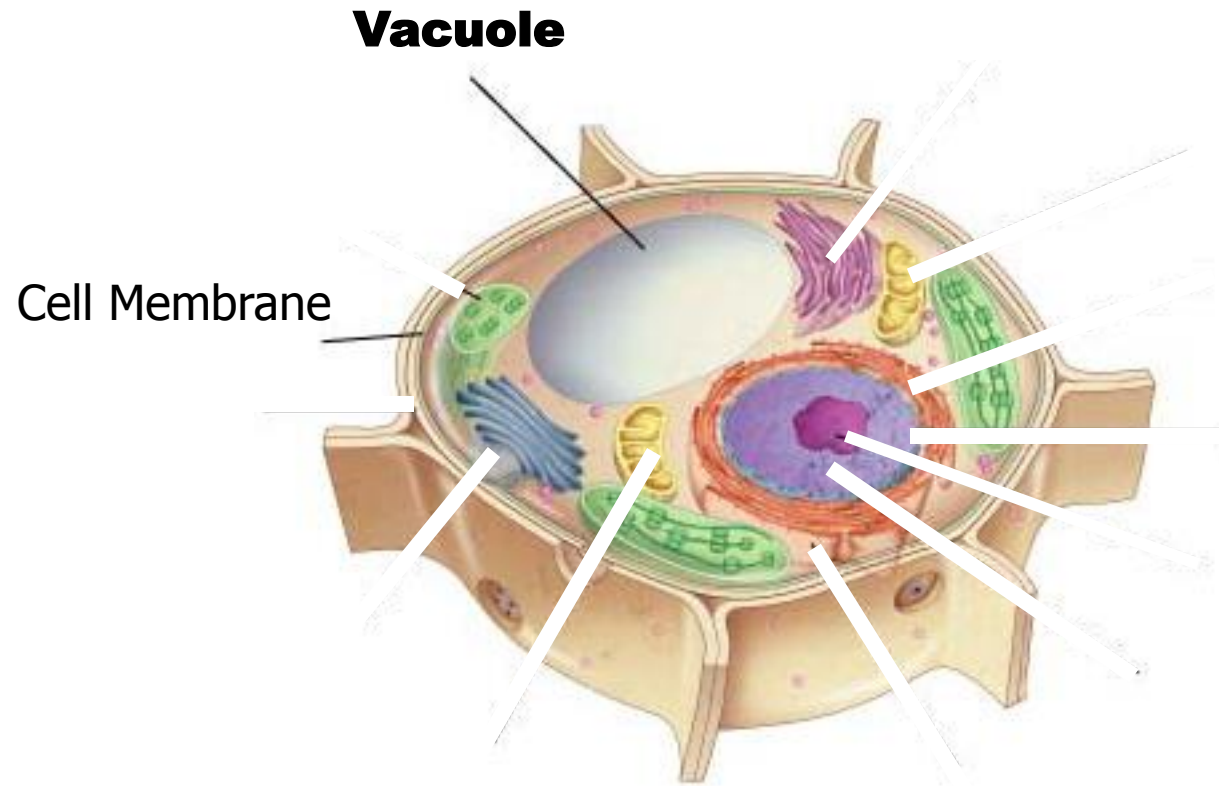
- Function: Energy formation
  - Breaks down food to make ATP
    - Adenosine Triphosphate (ATP): is the major fuel for powering cells. ATP is like cellular gasoline.
- Located: Cytoplasm

## Mitochondria Inner Structure



**Figure 1**

# Plant Cell



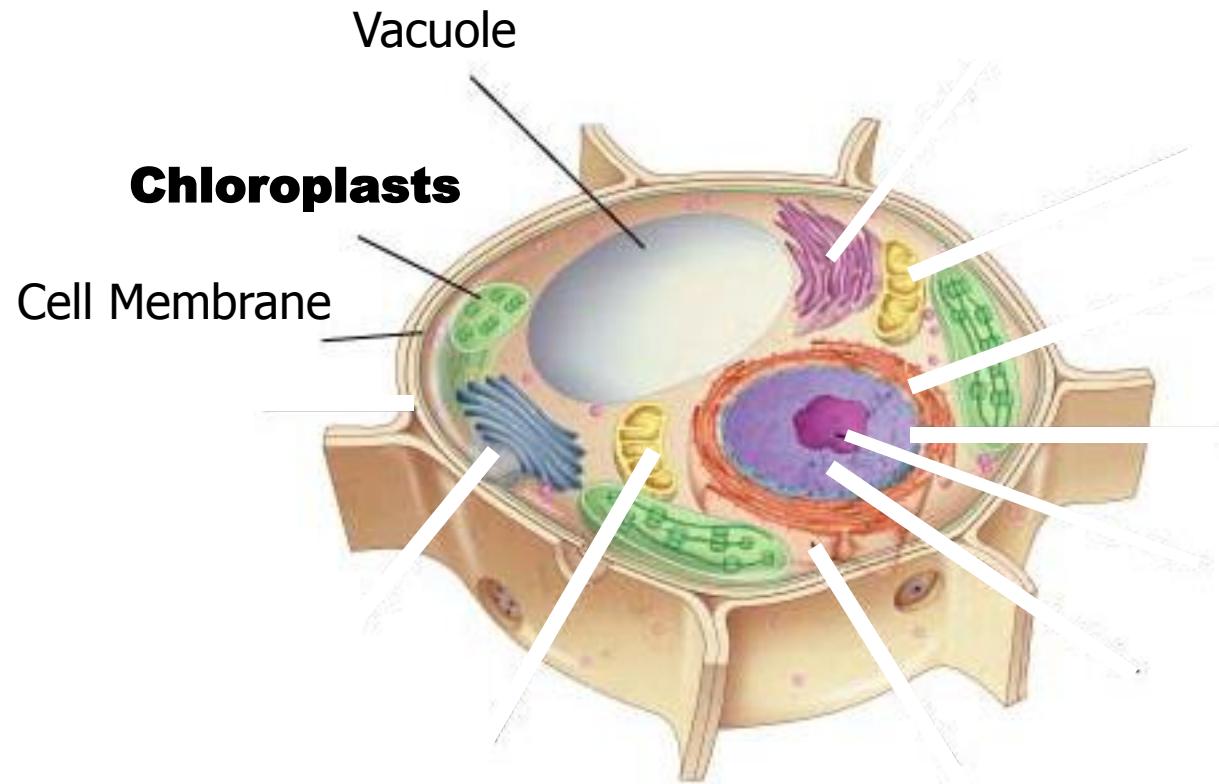


# Eukaryotic Cell Organelles and Function

## 7. Vacuoles

- Plant Cells
  - Structure: Very large
  - Function: Stores water
  - This is what makes lettuce crisp
    - » When there is no water, the plant wilts (there is less outward pressure on the cell wall)
- Animal Cells
  - Structure: Smaller than in plant cells
  - Function: Stores/releases waste products
- Located: Cytoplasm

# Plant Cell



# Eukaryotic Cell Organelles and Function

## 8. Chloroplasts

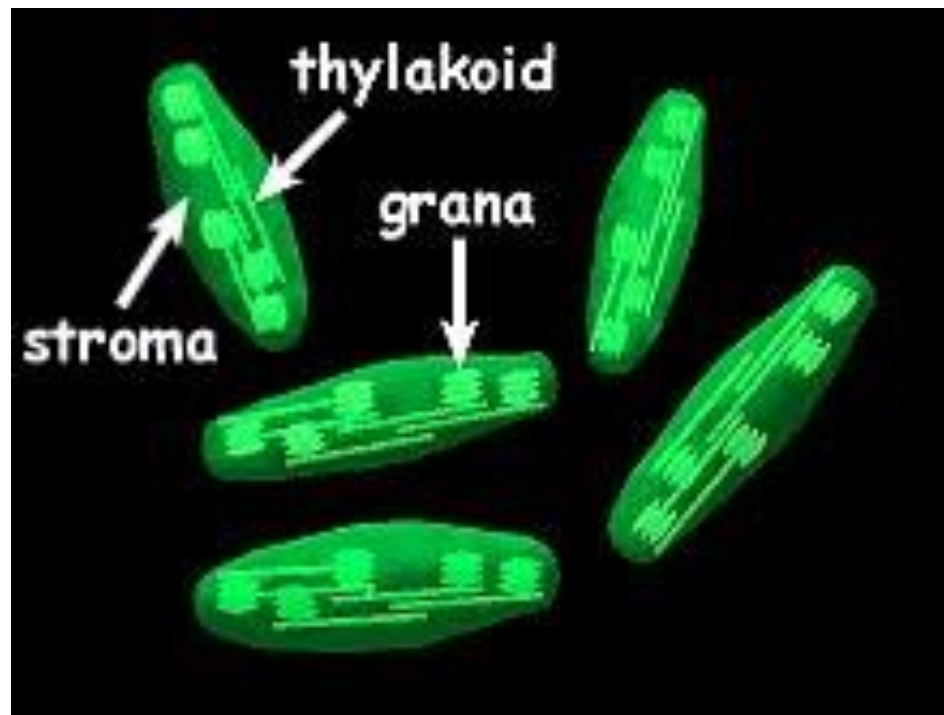
- Function: traps energy from the sun to produce food for the plant cell.

This where photosynthesis takes place.

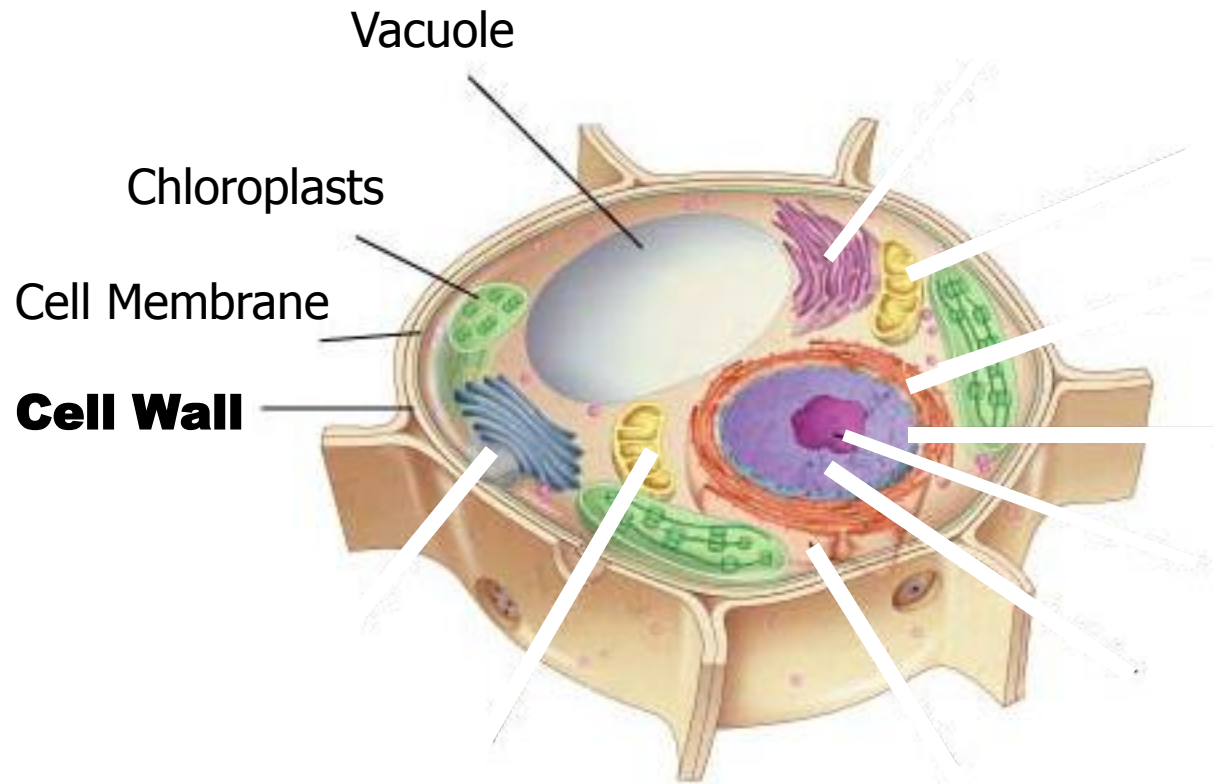
- Located: Cytoplasm

Green in color because of chlorophyll, which is a green pigment

# Chloroplasts



# Plant Cell

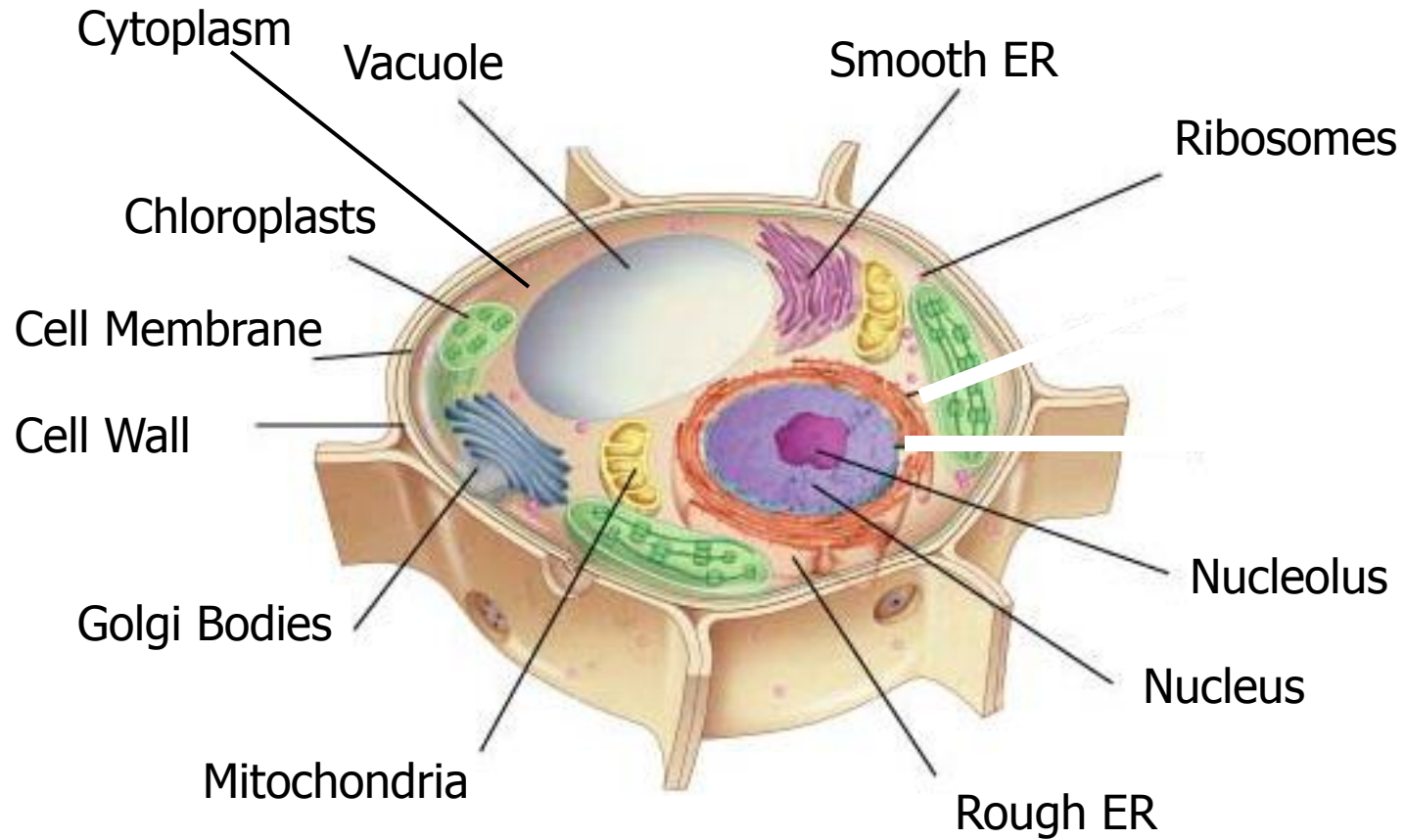


# Eukaryotic Cell Organelles and Function

## 9. Cell Wall

- Function: provides support and protection to the cell membrane
- Located: Found outside the cell membrane in plant cells (and Fungi)

# Plant Cell



# Eukaryotic Cell Organelles and Function

## 10. Plasma/Cell Membrane



### – Functions:

- Separates the inside of the cell from its environment  
(what might be some benefits of a separate inner and outer cellular environment?)
- Controls what substances enter and leave the cell

Oxygen, carbon dioxide, wastes, food, etc...

### – Located:

- In plant cells, it is to the inside of the cell wall
- In animal cells, it is the outermost part of the cell



# What do all cells have?


1.

2.

3.

4.

# An addition to the list..

- Cytoskeleton (also called the CSK) 
  - Function: scaffolding or skeleton. It provides support and structure.
  - Location: within a cell's cytoplasm

Why? The cytoskeleton is present in all cells; it was once thought to be unique to eukaryotes, but recent research has identified the prokaryotic cytoskeleton.

# What do all cells have?

1.

2.

3.

4.

5.

Why do you think I had to leave two of them off here?